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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,491	02/13/2001	Dallas L. Clouatre		8229

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EXAMINER	
JONES, DWAYNE C	

ART UNIT	PAPER NUMBER
1614	18

DATE MAILED: 11/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/781,491	CLOUATRE ET AL.	
	Examiner	Art Unit	
	Dwayne C Jones	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Status of Claims

1. Claims 1-18 are pending.

2. Claims 1-18 are rejected.

Response to Arguments

3. Applicants' arguments filed September 5, 2003 have been fully considered but they are not persuasive with respect to Shrivastava et al. Applicants present the following arguments. First, applicants deny the interchangeability between (-)-hydroxycitrate and (-)-hydroxycitric acid. Second, applicants next allege that old chemistry principles regarding carboxylic acids are wrongly extended to tricarboxylic acids. Third, applicants argue that substitution of one cation for another is not logical as in the case with a sodium cation for a magnesium cation. Fourth, applicants purport that the teachings of DiPiro et al. are not relevant to the instant invention. Fifth, applicants attempt to argue that there are improper characterizations of the compound of Shrivastava et al.

4. First, applicants deny the interchangeability between (-)-hydroxycitrate and (-)-hydroxycitric acid. Shrivastava et al. teach that it is known in the art that (-)-hydroxycitrate is the active ingredient obtained from the extract of Garcinia indica or Garcinia cambogia, trees that are found in Southeast Asia. In addition, Shrivastava et al. teach that (-)-hydroxycitrate is also equated with the name Garcinia acid as well as the compound of (-)-hydroxycitric acid, (see column 1, lines 19-22). Furthermore, even

if the prior art did not teach this equivalence, which it does, the skilled artisan can easily interconvert between an acid moiety and its conjugate base, as in the case between (-)-hydroxycitric acid and (-)-hydroxycitrate. The only difference between the acid and the conjugate base lies with the presence of an acidic proton of a carboxylic acid moiety. Accordingly, it is most certainly obvious to replace and convert a salt f a conjugate base back into its corresponding acid. As is evidenced with applicants' very own set of claims. In particular, instant claim 1 is directed to the administration of (-)-hydroxycitric acid to treat hypertension. Next, applicants state in claim 5 that the "(-)-hydroxycitric acid is supplied as a therapeutically effective amount of the alkali metal salts potassium or sodium (-)-hydroxycitrate." Surely from reading applicants' very own set of claims, one skilled in the art can and does easily see the interconnectivity between the acid and its corresponding conjugate base.

5. Second, applicants next allege that old chemistry principles regarding carboxylic acids are wrongly extended to tricarboxylic acids. The only difference between a monocarboxylic acid and a multicarboxylic acid lies with the increased number of carboxylic acid groups. One skilled in the art can easily apply and interpret well-established principles of organic chemistry to each carboxylic acid group on a compound such as (-)-hydroxycitrate.

6. Third, applicants argue that substitution of one cation for another is not logical as in the case with a sodium cation for a magnesium cation. Shrivastava et al. teach of administration of the alkaline earth metal salt of (-)-hydroxycitrate, namely magnesium. The determination and selection of a pharmaceutically acceptable cation is well within

the purview of the skilled artisan. Furthermore, in view of applicants' arguments regarding the improper substitution of a sodium cation for a magnesium cation, applicants' instant claims 1, 5, 7 embrace, if not specifically disclose, the use of the cation of sodium along with (-)-hydroxycitrate. Accordingly this begs the question, how does ones blood pressure gets lowered in view of the administration of sodium (-)-hydroxycitrate, as is claimed by applicants?

7. Fourth, applicants purport that the teachings of DiPiro et al. are not relevant to the instant invention. It is first noted that the teachings and disclosure of DiPiro et al. are used in view the prior art references of Shrivastava et al. of U.S. Patent No. 6,221,901 B1 in view of Solomons and McMurry. Each of these teachings are combined in order to arrive at the instant rejection. Moreover, these prior art references must be viewed as a combination of each reference and not as a single, separate reference that rejects the instant claims. Accordingly, the prior art reference of Shrivastava et al. teach in the background section that it is well known in the art that (-)-hydroxycitrate is known to reduce body weight by the reducing the synthesis of fatty material, (see column 1, lines 41-42). The prior art reference of DiPiro et al. teaches that the individuals with Type II diabetes are generally obese and that controlling the weight of an individual, (see Table 54.2 and pages 808-809 under the section entitled Treatment). DiPiro et al. also teach that these individuals may have abnormal levels of insulin, (see Table 54.2). Once again Shrivastava et al. teach of treating hypertension as well as obesity with the administration of (-)-hydroxycitrate or an analog thereof to an individual in need thereof, (see columns 1 and 2). Thus, by controlling the weight of the

individual and also by lowering the plasma glucose levels, insulin and other hormones could be reduced. Clearly, it would have been obvious to the skilled artisan that by treating an individual with (-) hydroxycitrate, glucose, insulin and other hormone levels could be modified and manipulated especially since it is known in the art that obesity is related to diabetes and that a composition containing (-) hydroxycitrate is known to treat obesity. Furthermore, the courts have held, *In re Swinehart*, 169 USPQ 226, "a newly discovered property does not necessarily mean that the product is unobvious, since this property may be inherent in the prior art." In view of this case law, applicants' recitation of lowering elevated insulin and elevated glucocorticoid levels is an inherent process that already occurs with the administration of the (-)-hydroxycitrate to treat hypertension in the prior art reference of Shrivastava et al. In addition, it would have been obvious to the skilled artisan to utilize analogs of (-)-hydroxycitrate, such as (-)-hydroxycitric acid, to treat hypertension. Moreover, the lowering of insulin and glucocorticoid levels is just an inherent biochemical mechanism that already occurs with the administration of (-)-hydroxycitrate as well as its analogs.

8. Fifth, applicants attempt to argue that there are improper characterizations of the compound of Shrivastava et al. Applicants' invention is directed to treating hypertension with the administration of (-)-hydroxycitric acid and (-)-hydroxycitrate. Similarly, the invention of Shrivastava et al. is directed to treating hypertension with the administration of (-)-hydroxycitrate. As is evidenced with applicants' very own set of claims. In particular, instant claim 1 is directed to the administration of (-)-hydroxycitric acid to treat hypertension. Next, applicants state in claim 5 that the "(-)-hydroxycitric acid is supplied

as a therapeutically effective amount of the alkali metal salts potassium or sodium (-)-hydroxycitrate." Surely from reading applicants' very own set of claims, one skilled in the art can and does easily see the interconnectivity between the acid and its corresponding conjugate base. For these reasons, it is clear that Shrivastava et al. provide a clear characterization of treating hypertension with the very same compounds and their corresponding analogs that are instantly claimed by applicants.

Information Disclosure Statement

9. Applicants also discuss various prior art teachings, namely the reference of Lowenstein, which were not applied in a previous rejection. This reference needs to be properly presented in an information disclosure statement.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

11. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shrivastava et al. of U.S. Patent No. 6,221,901 B1 possessing a 102(e) date of April

22, 1999. Shrivastava et al. teach of the therapeutic administration of (-) hydroxycitrate to treat a variety of ailments including hypertension, (see column 2, lines 34-48). Shrivastava et al. establish the interchangeability between (-) hydroxycitrate and (-) hydroxycitric acid. Shrivastava et al. teach that it is known in the art that (-)-hydroxycitrate is the active ingredient obtained from the extract of Garcinia indica or Garcinia cambogia, trees that are found in Southeast Asia. In addition, Shrivastava et al. teach that (-)-hydroxycitrate is also equated with the name Garcinia acid as well as the compound of (-)-hydroxycitric acid, (see column 1, lines 19-22).

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. The rejection of claims 1 and 4-8 under 35 U.S.C. 103(a) as being unpatentable over Shrivastava et al. of U.S. Patent No. 6,221,901 B1 in view of Solomons and

McMurry is maintained and repeated for both the above-stated and reasons of record. Shrivastava et al. establish the interchangeability between (-) hydroxycitrate and (-) hydroxycitric acid. Moreover, it is well within the level of the skilled artisan to convert between acid and its conjugate base, for instance (-) hydroxycitric acid and (-) hydroxycitrate. Shrivastava et al. teach of the therapeutic administration of (-) hydroxycitrate to treat a variety of ailments including hypertension, (see column 2, lines 34-48). Shrivastava et al. also teach that it is well known in the art that a composition containing (-) hydroxycitrate is used to combat excess weight and obesity, (see column 1, lines 27-30). Shrivastava et al. is silent to the lactone form of the (-) hydroxycitrate, it is widely accepted in the art that the cyclization of 5-membered ring into a lactone from its acyclic acid chain occurs readily. In fact, carboxylic acids whose molecules have a hydroxyl group on a gamma- or delta- carbon atom undergo an intramolecular esterification to give cyclic esters known as gamma- or delta- lactones, (see page 799 of Solomons, Organic Chemistry 3rd Edition). It is also known in the art that carboxylic acid can be readily converted into other carboxylic acid derivates, such as carboxylic acid esters and amides, (see McMurry of Organic Chemistry, 2nd Edition, pages 759-767). It is also within the purview of the skilled artisan to simply convert an acidic group of an active agent, for instance (-) hydroxycitrate, into its corresponding ester and/or amide derivatives for the purpose of generating controlled-release forms of the active agent because these derivatives have the extra step of either removing the ester or amide groups before the active agent can be utilized. Although the prior art reference of Shrivastava et al. teaches of using the magnesium salt of hydroxycitrate it is well within

the level of skill of the artisan to substitute one pharmaceutically acceptable cation for another. The determination of a dosage having the optimum therapeutic index, which includes pharmaceutically acceptable salts, is well within the level of one having ordinary skill in the art, and the artisan would be motivated to determine optimum amounts to get the maximum effect of the drug. Accordingly, the reference makes obvious the instant invention.

15. The rejection of claims 1-18 under 35 U.S.C. 103(a) as being unpatentable over Shrivastava et al. of U.S. Patent No. 6,221,901 B1 in view of Solomons and McMurry and in further view of DiPiro et al. is also maintained and repeated for both the outstanding and above-stated reasons. Shrivastava et al. establish the interchangeability between (-) hydroxycitrate and (-) hydroxycitric acid. Moreover, it is well within the level of the skilled artisan to convert between acid and its conjugate base, for instance (-) hydroxycitric acid and (-) hydroxycitrate. Shrivastava et al. teach of the therapeutic administration of (-) hydroxycitrate to treat a variety of ailments including hypertension, (see column 2, lines 34-48). Shrivastava et al. also teach that it is well known in the art that a composition containing (-) hydroxycitrate is used to combat excess weight and obesity, (see column 1, lines 27-30). Shrivastava et al. is silent to the lactone form of the (-) hydroxycitrate, it is widely accepted in the art that the cyclization of 5-membered ring into a lactone from its acyclic acid chain occurs readily. In fact, carboxylic acids whose molecules have a hydroxyl group on a gamma- or delta-carbon atom undergo an intramolecular esterification to give cyclic esters known as gamma- or delta- lactones, (see page 799 of Solomons, Organic Chemistry 3rd Edition).

It is also known in the art that carboxylic acid can be readily converted into other carboxylic acid derivates, such as carboxylic acid esters and amides, (see McMurry of Organic Chemistry, 2nd Edition, pages 759-767). It is also within the purview of the skilled artisan to simply convert an acidic group of an active agent, for instance (-) hydroxycitrate, into its corresponding ester and/or amide derivatives for the purpose of generating controlled-release forms of the active agent because these derivatives have the extra step of either removing the ester or amide groups before the active agent can be utilized. Although the prior art reference of Shrivastava et al. teaches of using the magnesium salt of hydroxycitrate it is well within the level of skill of the artisan to substitute one pharmaceutically acceptable cation for another. The determination of a dosage having the optimum therapeutic index, which includes pharmaceutically acceptable salts, is well within the level of one having ordinary skill in the art, and the artisan would be motivated to determine optimum amounts to get the maximum effect of the drug. Accordingly, the reference makes obvious the instant invention.

16. DiPiro et al. teach that body weight and obesity are common characteristics in diabetes. DiPiro et al. also teach of various causes of diabetes, inter alia, elevated insulin and glucocorticoids and hormones, (see Table 54.1 on page 806 and pages 805-811). Accordingly, by treating hypertension as well as obesity with the administration of (-) hydroxycitrate or an analog thereof to an individual in need thereof, the individual would also be treating diabetes by inter alia, controlling the weight of the individual and also by lowering glucose levels as well as insulin and other hormones, see DiPiro et al. Clearly, it would have been obvious to the skilled artisan that by treating an individual

with (-) hydroxycitrate, glucose, insulin and other hormone levels could be modified and manipulated especially since it is known in the art that obesity is related to diabetes and that a composition containing (-) hydroxycitrate is known to treat obesity.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. C. Jones whose telephone number is (703) 308-4634. The examiner can normally be reached on Mondays through Fridays from 8:30 am to 6:00 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel can be reached on (703) 308-4725. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

DWAYNE C. JONES
PRIMARY EXAMINER
Tech. Ctr. 1614
November 21, 2003